

Application No. 10/716,101
Amendment Dated June 12, 2007
Reply to Office Action of March 19, 2007
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Amendments to the Drawings

The enclosed new drawing sheet includes new Figures 7-8.
Entry of the sheet is respectfully requested.

Attachment: New drawing sheet of Figures 7-8.

Remarks/Arguments

Amendments to the Specification

The amendments correct minor typographical errors, improve the form of the specification and refer to new Figures 7 and 8. New matter was not added.

Entry of the amendments to the specification is respectfully requested.

Amendments to the Drawings

The drawings are objected to because they do not disclose claimed features of inlet throttle valve 24 and the fast acting two position on-off valves.

In response to the objection to the drawings, Applicant submits new Figures 7 and 8 disclosing, respectively, throttle valve 24 and fast acting poppet on/off control valve 36. The Figure 7 inlet throttle valve is disclosed in Figure 12 of Applicant's prior U.S patent no. 6,460,510. Valve 24 includes a spool 90 with a hydraulic chamber 94 at one end of the spool. The spool includes piston 92 forming one wall of the chamber. Spring 32 biases the spool toward the open position. Valve 24 is connected between low pressure inlet line 26 and inlet passage 28 extending from the valve to high-pressure pump 22. Figure 7

illustrates the same features of the valve 24 without introducing new matter.

Figure 8 illustrates a poppet-type on/off control valve with a fast acting, two position solenoid. Valve 36 includes on/off valving member 100, spring 46 biasing the valving member toward the closed position and solenoid 48 which actuated, moves valving member 100 to an open position. Figure 8 illustrates features of the fast acting two position on/off control valve without introducing new matter.

The specification has been amended at pages 3, 4, 5, and 6 to refer to the Figures 7 and 8 valves, without introducing new matter.

Approval and entry of new drawings 7 and 8 and withdrawal of the objection are solicited.

Amendments to the Claims

The amendments make clear the control valves are of the fast acting on-off type and are not modulating valves.

Restriction Requirement

Applicant thanks the examiner for reconsideration of the restriction requirement. Claim 4 is canceled.

35 USC § 112 Rejection

Claims 19-22 are rejected because steps A and B are reversed. Amended claims 19-22 correct this to comply with the enablement requirement. The claimed method as amended now corresponds to the method disclosed in the specification. Reconsideration and withdrawal of the rejection of claims 19-22 is respectfully requested.

35 USC § 103(a) Rejection

Claims 1-3, 5-18 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold et al. US Patent 6,293,253 in view of Ramseyer et al. 6,439,199.

Applicant respectfully asserts that the Examiner has not established a prima facie case of obviousness. Neither reference teaches or suggests use of a fast acting on/off control valve to control the actuation of a throttling valve for a high-pressure pump.

M.P.E.P. Section 2143 reads:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in

the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. ***Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.***

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

(Emphasis added.)

Use of fast acting on/off control valve 36 is not taught or suggested by Arnold et al. US Patent 6,293,253. The '253 patent discloses that pressure control valve 30 is a "proportional pressure control valve." See Column 5, line 38, Column 5, line 66. Additionally, the representational hydraulic circuit in Figure 1 identifies valve 30 as a "Proportional Relief Valve Direct Acting" per conventional ISC symbol standards. See attached excerpt from Chapter 4 of the International Standards Organization on hydraulic standards, taken from the web address www.hydraulicspneumatics.com/200/eBooks/Article/True/32028/.

The '253 patent does not teach or suggest use of a fast acting on/off control valve to control the actuation of a throttling valve for a high-pressure pump.

Use of fast acting on/off control valve 36 is not taught or suggested by Ramseyer et al. US Patent 6,439,199. The '199 patent discloses control valve 204 as a "solenoid operated, pressure reducing or control valve." See Column 10, line 47, Column 5, line 66. Valve 204 is actuated by solenoid 225 that "meter(s) flow though through pressure control valve 204," see Column 11, line 32. Again, the representational hydraulic circuit in Figure 1 of the '199 patent identifies valve 204 as a "Proportional Relief Valve Direct Acting" per conventional ISC symbol standards.

The '199 patent does not teach or suggest use of a fast acting on/off control valve to control the actuation of a throttling valve for a high-pressure pump.

A proportional pressure control valve or metering valve is a modulating valve, which allows for the variable, partially restricted fluid flow between a high-pressure pump and a throttling valve. A proportional pressure control or metering valve is not an on-off valve, which allows for very rapid articulation of the valve between fully open and fully closed

positions and delivers much improved performance in regulating inlet throttle valve 24. The improved performance cannot be achieved with a proportional pressure control valve.

A fast acting on/off control valve is not taught or suggested by either of the prior art references. As such, the examiner has not established a prima facie case of obviousness.

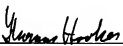
The applicant has amended claims 1 and 15 to emphasize this difference between the present claims and prior art.

Applicant has voluntarily amended Claim 2 to improve the form of the claim. This amendment is not made in response to statutory rejections.

Applicants request withdrawal of the rejections and allowance.

Respectfully submitted,

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